

REMARKS

Reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

A. Status of the Claims / Explanation of Amendments

Claims 1-11 and 13-15 were pending. By this paper, claims 1, 5, 11 and 13 are amended.

Claim 1 is amended to recite “an exhaust unit which exhausts a gas in said load-lock chamber, wherein said dehumidifying unit forms a dehumidified atmosphere in said load-lock chamber by supplying said dehumidified gas into said load-lock chamber before said exhaust unit exhausts the gas in said load-lock chamber.” Claims 5, 11 and 13 are similarly amended.

Support for these amendments is found throughout the application as originally filed, including for example at p. 18, lines 14-24. No new matter will be added to this application by entry of these claims. Entry is requested.

Claims 1-11 and 13-15 were rejected were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,914,493 to Morita et al. (“Morita”) in view of U.S. Patent No. 5,725,664 to Nanbu et al. (“Nanbu”).

B. Claims 1-11 and 13-15 Are Patentably Distinct From Morita Alone Or In Combination With Nanbu

The rejections of claims 1-11 and 13-15 are respectfully traversed. As explained more fully below, the requirements for such rejections are not met since the

cited references, taken alone or in combination, fail to teach, disclose, or suggest all of the recited claim elements. Specifically, Applicant's claim 1 recites:

1. A load-lock system comprising:
a load-lock chamber arranged between a storage port which stores a substrate and a process chamber which processes the substrate in a process space maintained at a pressure lower than a pressure in the outside;
a dehumidifying unit which supplies dehumidified gas into said load-lock chamber; and

an exhaust unit which exhausts a gas in said load-lock chamber,

wherein said dehumidifying unit forms a dehumidified atmosphere in said load-lock chamber by supplying said dehumidified gas into said load-lock chamber before said exhaust unit exhausts the gas in said load-lock chamber.

Morita is directed to a charged-particle-beam exposure apparatus. The apparatus of Morita's second embodiment has a wafer carrier (29), a coating chamber (27), a baking chamber (26), and a cooling chamber (25), sequentially connected. [Morita, Fig. 5, col. 6, lines 13-17]. The cooling chamber (25) is connected to a separate, load-lock chamber (23) by a first gate valve (24). [Morita, Fig. 5, col. 6, lines 17-18]. The load-lock chamber (23) is connected to an exposure-processing chamber (21) by a second gate valve (22). [Morita, Fig. 5, col. 6, lines 18-20].

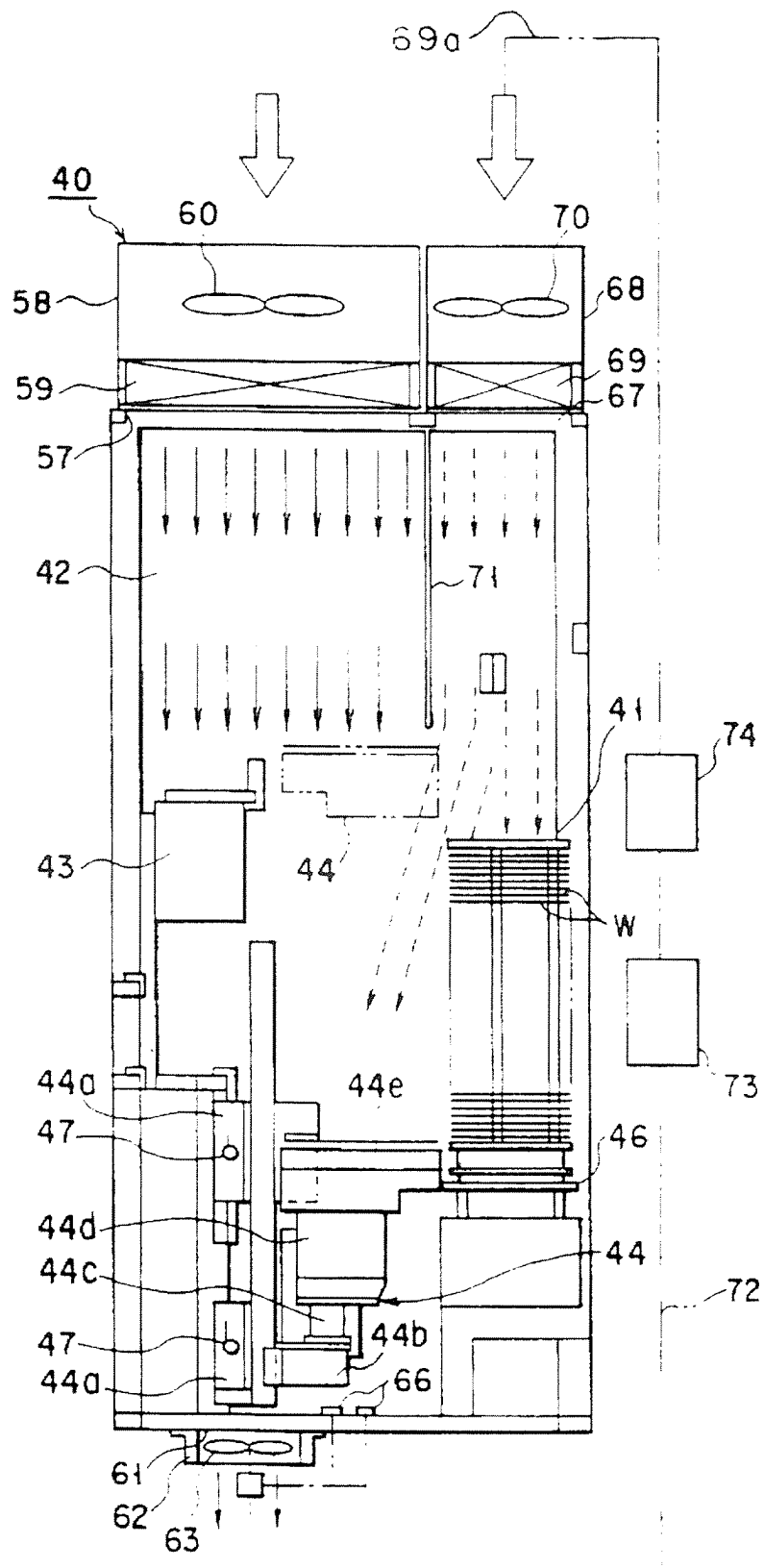
According to the Office Action, Morita's load-lock chamber (23) corresponds to the "load-lock chamber" recited in Applicant's claim 1, the exposure chamber (21) corresponds to the "process chamber" recited in Applicant's claim 1, and the substrate carrier (29) corresponds to the "storage port" recited in Applicant's claim 1.

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[10/24/06 Office Action at p. 2]. Further, the office action asserts that the load-lock chamber (8) is where pressure is first reduced. [10/24/06 Office Action at p. 2].

The Office Action admits that Morita fails to teach, disclose or suggest “a humidifying unit supplying dehumidified gas into the load-lock chamber.” [10/24/06 Office Action at p. 2]. For this claim element, the Office Action relies upon Nanbu. [10/24/06 Office Action at p. 2-3].

Nanbu is directed to an apparatus for subjecting a plurality of wafers to coating and heating treatments. Figure 4 shows an interface section in the substrate processing apparatus:



Nanbu's interface section includes, *inter alia*, a dehumidifying air inlet port (67), an interface box (42), a dehumidified air supply duct (69a), a dehumidified air supply duct (68), a circulation duct (72), and a dehumidifier (74). In addition, "[o]ne or a plurality of discharge fans (63) are arranged (in arbitrary intervals) in an air discharge duct (62) connected to an air discharge port (61)." [Nanbu, Col. 11, lines 54-56].

Nanbu discloses that "the dehumidified air supplied from the dehumidified air inlet port (67) into the chamber concentratedly **flows downward, and is discharged** from the air discharge port (61) by the air discharge fan (63)." [Nanbu, Col. 12, lines 22-25 (emphasis added)]. "With this arrangement, dehumidified air can be supplied into the interface box (42) **while circulating it.**" [Nanbu, Col. 12, lines 41-42 (emphasis added)]. Thus, the humidifier described in Nanbu is configured to constantly supply the dehumidified gas into the interface box so that it reaches the air discharge fan (63) and is circulated. Nanbu further teaches:

"When the door (65) is opened, the switch (66) (e.g., a magnet type) operates to automatically stop the air discharge fan (63). In this manner, the air supply fan (60) is arranged at the ceiling of the box (42), and the air discharge fan (63) is arranged at the floor. Since an **air supply amount is set larger than an air discharge amount, cleaned air is flowed downward** in the box (42) in the normal operation **to keep the interior of the chamber at a slightly positive pressure.**" [Nanbu, Col. 11, line 61 – Col. 12, line 2 (emphasis added)].

...

"For this reason, as represented by dashed arrows in FIG. 4, the dehumidified air **concentratedly flows onto (around) the wafer W** loaded in the wafer boat (41) (the **air flows along**

or to cover the wafer), and contacts the surface of the wafer W to prevent a hygroscopic SOG film coated on the surface of the wafer from being degraded by moisture absorption, thereby keeping a predetermined humidity.”
[Nanbu, Col. 12, lines 26-32 (emphasis added)].

Thus, Nanbu also fails to teach, disclose or suggest “an exhaust unit which exhausts a gas in said load-lock chamber, wherein said dehumidifying unit forms a dehumidified atmosphere in said load-lock chamber by supplying said dehumidified gas into said load-lock chamber before said exhaust unit exhausts the gas in said load-lock chamber” as recited in Applicant’s claim 1.

Accordingly, Applicant’s independent claim 1 is patentably distinct from Morita alone or in combination with Nanbu. Independent claims 5, 11, and 13, and dependent claims 2-4, 6-10 and 14-15 are respectfully asserted to be patentably distinct from Morita and Nanbu for at least similar reasons.

Applicant has chosen in the interest of expediting prosecution of this patent application to distinguish the cited documents from the pending claims as set forth above. These statements should not be regarded in any way as admissions that the cited documents are, in fact, prior art.

Applicant has not specifically addressed the rejections of the dependent claims 2-4, 6-10 and 14-15. Applicant respectfully submits that the independent claims, from which they depend, are in condition for allowance as set forth above. Accordingly, the dependent claims 2-4, 6-10 and 14-15 also are in condition for allowance. Applicant,

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however, reserves the right to address such rejections of the dependent claims in the future as appropriate.

CONCLUSION

For the above-stated reasons, this application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is requested. In the event that a telephone conference would facilitate the examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED FOR THE TIMELY CONSIDERATION OF THIS AMENDMENT UNDER 37 C.F.R. §§ 1.16 AND 1.17. OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 13-4500, ORDER NO. 1232-5355.

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Respectfully submitted,
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